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# NORTHEASTERN FOREST PEST REPORTER

United States Department of Agriculture • Forest Service



No. 1

July 12, 1961

## INTRODUCTION

The transfer of pest control activities in the U. S. Forest Service in this region from the Northeastern Forest Experiment Station to the Regional Office, R-7, is outlined in the following memo recently sent to state foresters and entomologists, industrial and consulting foresters, entomologists and pathologists, and various federal units.

"Organizational changes affecting insect and disease control activities in the U. S. Forest Service will be made on July 1. Forest Experiment Stations will be relieved of responsibility for insect and disease detection and evaluation. These activities will then become the responsibilities of the Regional Foresters. This change, the first step of which is scheduled for July 1, is designed to strengthen research on pest problems, and at the same time, to extend and intensify field detection surveys.

"Detection survey programs and techniques have made many advances under the leadership of the Experiment Stations. However, critical seasons for conducting detection surveys frequently coincide with important periods for study of the development of forest pests. An increase in the Fiscal Year 1962 budget item for insect and disease research will enable entomologists and pathologists at the Experiment Station, whose primary responsibility is research, to spend time in investigative efforts that was formerly devoted to surveys during this strategic period.

"The report, TIMBER RESOURCES FOR AMERICA'S FUTURE, pointed out the tremendous losses in timber production caused by insect and disease. Biological knowledge, which can be applied in pest control programs, is urgently needed.

"The assignment of detection and evaluation surveys to the Eastern Region's Division of State and Private Forestry will merge this activity with the Division's pest control program. Under the Regional Forester, these activities will be linked with cooperative forest management programs with the states and the administration of the National Forests. This combination of responsibilities will simplify coordination of surveys with other forest management field activities. By facilitating training programs for pest identification by field forces and shortening lines of communication, the change will extend and increase the efficiency of field detection surveys. This will afford additional opportunities to reduce insect and disease damage. Regional Foresters and Experiment Station Directors are working together during the transition so there will be the least possible disturbance at the field level."

NOTE: For the present, inquiries and reports of forest insect and disease conditions should continue to be sent to the Forest Insect and Disease Laboratory, 335 Prospect Street, New Haven, Conn.

#### FOREST INSECTS

The abnormally cool, wet spring has retarded insect development by about 7 to 10 days. A heavy frost (May 30) occurred in the Northeast. Although severe injury was caused to trees, particularly hardwoods in many areas, little insect mortality was observed as a direct result of this frost. Regarding hardwood pests, the general complex of numerous defoliators seems to be increasing over last year, augmented by one interesting report from Connecticut where twelve insect species were found on a single black oak branch. This complex certainly presents a most challenging problem to forest insect research.

SPRUCE BUDWORM (Choristoneura fumiferana). Spraying for control of the budworm in northern Maine commenced on June 15 of this year as compared with June 7 in 1960. Approximately 48,000 acres south and west of Ashland were sprayed by the Simsbury (Conn.) Flying Service using two TBM's and one Stearman biplane. Base of operations was the Caribou airport. Budworm development and survey collections were checked at the Portage Laboratory and outlying survey collections were processed at the Sinclair Laboratory. This was a cooperative project, as previously, of the Maine timberland owners, Maine Forest Service, and the U. S. Forest Service. Outside of the control area appreciable defoliation on an additional 50,000 acres is expected.

BALSAM WOOLLY APHID (Adelges piceae). Biological control of the aphid was continued this spring with additional liberations of the predaceous beetle Laricobius erichsonii. Recent evidence of this predator successfully becoming established on the aphid infestation of the Penobscot Experimental Forest in Maine prompted further releases of this beetle this spring during May and early June. The arrangements for the importation of L. erichsonii were made by the Northeastern Forest Experiment Station with the Insect Identification and Parasite Introduction Branch of the Agricultural Research Service. The adult beetles were collected in Germany and shipped to the United States through the European Parasite Laboratory of A.R.S. at Paris, France. The material was received at Moorestown, N.J. where it was examined, repackaged in lots of 100 beetles each for air shipment to State and National Forest personnel responsible for the liberations. The overall project was financed by Forest Pest Control Act funds through the eastern regional office of the U.S. Forest Service. The beetles were released as follows: 2,400 in Maine (3 locations); 3,000 in White Mountain National Forest, New Hampshire (5 locations); 5,000 in Green Mountain National Forest, Vermont (10 locations).



PINE SAWFLIES Preliminary results of the cooperative aerial survey for Neodiprion pratti pratti defoliation in Maryland, Virginia, and North Carolina indicate generally lower intensity of feeding, a higher incidence of disease, and late or non-uniform larval development due to unusually cool wet weather in April and May. A complete report on this survey will be published at a later date. Defoliation of pitch pine in southern New Jersey by N. pratti paradoxicus and N. pini rigidae appears reduced this year. Oviposition by N. lecontei near Harrisville, N.Y. indicates a likely heavy infestation there. N. sertifer reported common, but general distribution not changed in Connecticut from last year. In New York (Dutchess County) N. sertifer reported 80 percent higher than in 1960. There is also a light infestation in a 40-acre Scotch pine Christmas tree plantation in town of Oppenheim, Fulton County, N. Y. where control operations are being undertaken.

In a recent letter from Dr. C. E. Atwood of the University of Toronto, he indicates that he found no N. nanulus in New Jersey nor in certain areas of Cape Cod, but there was some question as to the positive existence of N. pini-rigidae and N. pratti paradoxicus in these areas, merely pointing out that sawfly (Neodiprion spp.) taxonomy is still incomplete. There is a light infestation of the spruce sawfly (Diprion hercyniae) in a Christmas tree planting near Elmira, N.Y.

WHITE-PINE WEEVIL (Pissodes strobi). In Maine several areas were sprayed using a knapsack sprayer (lindane and aroclor) and will serve as demonstration control areas in the future. Average cost was \$2.19 per hour/acre plus 2.6 man hours on trees 10 to 12 feet tall. On the Massabesic Experimental Forest in Southern Maine 28,000 young white pine were sprayed between March 27 and May 17. Other experimental spraying by the New Haven Laboratory during the winter indicates lindane to be superior to malathion when aroclor or two other extenders were used with each insecticide. Elsewhere in the Northeast, the weevil continues to be the most serious pest of white pine.

PINE LEAF APHID (Pineus pinifoliae). This year heavy accumulation of galls may be found on the red spruce in the general infestation areas. Spotty infestations are reported in several areas of New York and many galls were noted on spruce in Fulton County. In Maine, additional surveys were made in Washington, Hancock, Piscataquis, and Somerset Counties to determine the extent of infestation. Greatest injury occurred in understory pine in mixed stands where as much as 29 percent mortality occurred from cumulative feeding on the white pine. Pines less than 3-feet tall were damaged very little. Generally, mortality in mixed stands ran as high as 13 to 15 percent whereas in open stands mortality was less than 1 percent.

MATSUCOCCUS SCALE This scale insect (Matsucoccus resinosae) continues to be a most serious menace to red pine plantations in southern Connecticut, New York, and New Jersey. The insect was found near Lake Zoar, Connecticut. In New Jersey, near Wanaque, a large-scale operation is underway where all the red pine is being cut, treated and removed from a particular area on water company property there.

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana). Scouting for this insect continues in Maine but as yet it has only been recorded as far north as Woolwich and Newcastle. In Delaware this insect is heavy in one area of Scotch pine in New Castle County.

SOUTHERN PINE BEETLE (Dendroctonus frontalis). In Southeast Sussex County, Delaware, several hundred acres of loblolly pine are infested with this pest. In Maryland, some activity by this insect has also been noted.

MISCELLANEOUS INSECTS ON CONIFERS. Pine bark aphid (Pineus strobi) is of moderate severity on white pine in Delaware, southern Maine, and New York State. Ips pini

(Tug Hill, Jefferson County, New York) reported a year ago continues to kill red pine around the periphery of the original 4-acre infestation. In addition, the infestation has spread to smaller trees in nearby plantations. Arborvitae leaf miner (Argyresthia thuiella) activity reported from St. Lawrence County, New York and in central Maine. A heavy outbreak of pales weevil (Hylobius pales) reported on Scotch pine Christmas trees in Thurman, N. Y. Pine spittlebug (Aphrophora parallela) is reported moderate on Virginia and loblolly pines in Kent and Sussex Counties, Delaware. A pine looper (probably Lambdina athasaria pellucidaria) heavily defoliated pitch and Virginia pines in southern New Jersey and some mortality resulted therefrom. The white-pine cone beetle (Conophthorus coniperda) continues to be active in southern Maine although development was retarded by the late spring. In Rhode Island (Scituate Watershed) a general infestation of mites on white spruce is reported. A shoot moth (not yet determined) in red pine in Massachusetts has practically been eliminated by severe winter temperatures. The pine root collar weevil (Hylobius radicis) has very heavily infested a 20-acre Scotch and red pine Christmas tree planting near Turtle Pond, North Elba, N. Y. Also light infestations are reported in Warren and Saratoga Counties and it has caused some mortality of Scotch pine at the Ranger School, Wanakena, N. Y. A light infestation of the larch casebearer (Coleophora laricella) was noted in the town of Mayfield, Fulton County, N. Y. In Maine the balsam gall midge (Itonida balsamicola) has declined from previous abundance in past several years. A heavy infestation of scale (undetermined) is reported on white pine near Parsonsfield, Maine. Several areas in 3- to 5-foot white-pine plantations have been noted with dead, dying, or badly affected trees. In the centers of each of these areas were nests of mound-building ants.

EASTERN AND FOREST TENT CATERPILLARS (Malacosoma spp.). Both of these insects are reported moderately heavy throughout the Northeast. A survey of forest tent caterpillar (Malacosoma disstria) in Pennsylvania is planned for this fall.

OAK LEAF ROLLER (Argyrotoxa semipurpurana). Again reported heavy in town of Mount Washington, Mass. (see PEST REPORTER, July 15, 1960) and is also strongly suspected in Ulster, Sullivan, and Orange Counties, New York, where pin, red, scarlet, and scrub oaks have been heavily defoliated.

BEECH SCALE-NECTRIA. In Essex County, New York in approximately 30 acres of mixed northern hardwoods, beech scale was reported but no Nectria was noted. In New Hampshire scale infestations are generally light to moderate on beech. A predaceous beetle (Chilochorus stigma) has been observed commonly on the scale this year.

GYPSY MOTH (Porthetria dispar). In New York State approximately 53,000 acres of heavy infestation were sprayed using 1/2 pound of DDT per acre. "Other thousands" were left untreated because of the possibility of contaminating pasture lands. Hatch was good except in frost pockets where some mortality did occur. An aerial defoliation survey will begin on July 10. Frost damage to the oaks due to a late freeze on May 30 may appear as defoliation and thus complicate aerial observations. In Connecticut 46,000 acres were sprayed for gypsy moth control. Maine reports that 1,850 acres of oak woodland were sprayed for moth control in the towns of Lyman, Waterboro, and Cherryfield. In Massachusetts approximately 2,000 acres were sprayed for gypsy moth control. Heavy snow cover apparently protected the overwintering gypsy moth eggs from mortality due to extremely cold weather.

MISCELLANEOUS INSECTS ON HARDWOODS. The birch leaf miner (Fenusa pusilla) continues to heavily infest gray birch throughout the Northeast from Delaware to Maine. The linden looper (Erannis tiliaria) is reported abundant in central Connecticut and in



eastern New York. The spring and fall cankerworms (Paleacrita vernata and Alsophila pometaria) have also caused heavy hardwood defoliation in these same areas as well as in Pennsylvania, Massachusetts, and northern New Jersey. It is also reported as general in Delaware. In Connecticut 2,000 acres were sprayed for control of the cankerworms and linden looper. Spot stripping by the satin moth (Stilpnotia salicis) in Aroostook County, Maine is reported. Hickory bark beetle (Scolytus quadrispinosus) is reported from Dutchess County, New York.

OTHER PESTS. Among these are porcupine injury which appears to be of increasing importance in some northerly red-pine plantations. Injury by mice was severe in some places, due to prolonged snow cover. Its occurrence, however, was spotty. For example, in one area in central Massachusetts every wild cherry in a large Fomes annosus hole in a red-pine planting had been debarked for 1 to 2 feet above the ground line. Nearby areas, however, showed no injury. New York reported that rodent injury was a common occurrence. Maryland reported that many loblolly pines were girdled by mice in the northern part of the State.

### FOREST DISEASES

So far, disease pests have been mostly light and inconspicuous. The weather of last fall, the past winter, and this spring had a lot to do with this. This past weather has been so unusual that an appraisal of the present disease situation and predictions for the coming year cannot be made without considerable risk of being proven wrong by later developments. That these unusual conditions will affect the disease situation cannot be doubted. Therefore, a brief review and discussion of what happened and some effects already noted is in order.

Last fall was unusual over much of the Northeast because of its mildness. The first killing frost was late, occurring in southern New England on October 21. Most of November was unusual for its mild, beautiful weather. Temperatures were above normal and it became questionable whether plants would become sufficiently hardened off before the advent of real winter weather. Cold winter temperatures arrived rather suddenly, about December 10, when temperatures dropped and we had our first taste of winter. January temperatures were below normal with many areas experiencing record-breaking lows. Snowfall was heavy, especially in southern parts of our territory. This snow cover was prolonged into February as cold weather accompanied the snows. This heavier than usual snow cover prevented frozen soils, in spite of the low temperatures. The disappearance of the snow cover was gradual. The period of cold weather gradually ameliorated and little precipitation occurred during this period. The gradual disappearance of the snow cover and less than normal precipitation prevented disastrous flooding. What rains occurred were light but frequent in March, although March and April had below normal temperatures and rainfall was about normal or slightly above average. Parts of northern New England did not have the abundance of snow normal for those areas, and often more snow fell in southern areas. In such cases prolonged cold was accompanied with frozen soils. The general absence of deeply frozen soils in many places resulted in the lack of the usual "mud periods." Such periods occur during the spring thaws and back-country roads become impassable -- a condition which did not occur in many parts of southern and central New England.

Spring was late. It is estimated that it was at least one week late over most of southern New England and more southerly parts, and two weeks late in more northerly parts. Generally, May was colder than normal with rainfall about normal or slightly above. We had no periods of prolonged warm weather during May. Late snows and frosts occurred. For example, your recorder drove into a brief, rather heavy snowstorm in the Somerset-Bedford area of southern Pennsylvania on May 27.

Frost occurred in the Lambertville-Flemington area of New Jersey on May 29. Late killing frosts hit much of New England on May 31.

What were the effects of such unusual weather conditions? Winter burn of conifers was slight to moderate, but generally distributed. Winter kill to forest trees was practically nonexistent. Unfrozen soils permitted adequate soil moistures, and the lack of strong drying winds were generally favorable to plants. The intense prolonged cold, rather than the lack of available moistures caused spotty killing of foliage, principally to broadleaved evergreens in scattered localities. Most of such damage was to ornamentals rather than forest trees. Spot killing occurred in New York, Pennsylvania, New Jersey, and elsewhere to angiosperm evergreens including Rhododendrons, boxwood, privet, and Ilex spp. Of the gymnosperms, yew and arborvitae were apparently hit the hardest. Winter drying of spruce, hemlock, balsam fir, and white pine were reported from Vermont, New Hampshire, and northwestern Massachusetts. Cold damage in New Hampshire, southern Maine, Massachusetts, Connecticut, etc., killed the flower buds but usually not the vegetative buds of some woody plants, including peach trees. This effect was very striking in Forsythia where often flowering only occurred on the lower branches within a foot or two above ground, or on parts protected by the snow cover. Some top kill in topmost branches of hardwoods apparently occurred, and some were slow to foliate in upper branches. Considerable snow breakage occurred in New England, but for the most part plantings and ornamentals near buildings were affected. Breakage to forest trees was generally light.

In summary, then, forest trees came through the winter surprisingly well. Snow breakage was moderate to light. Winter kill and winter burn was fairly widespread but resulted in little actual damage. An exception seems to have occurred in the southeastern section of our territory as one report tells of winter injury being more severe than usual in southern New Jersey, Delaware, and Maryland. Many ornamentals and shrubs were killed back, while brown foliage on many pines in wooded areas was noticeable. Mimosa in northern Maryland sustained some winter kill. Pitch, shortleaf, loblolly, and Virginia pines were all affected, with loblolly pine planted north of its natural range showing the greatest amount of injury. For example, patches of loblolly pine, two acres in extent, were completely brown on south-facing slopes of the Baltimore Liberty Watershed. Less exposed trees on higher ground often showed little damage. Late May frost damage occurred throughout much of northern New England and was particularly noticeable on ash, hickory, beech, oak, butternut, and the new growth of many conifer species. It undoubtedly would have been much worse if spring had not been so late, and if tree foliage had been further developed.

FOLIAGE DISEASES The anthracnoses. The late spring and continued cool weather of May greatly reduced damage by the anthracnoses. Sycamore anthracnose (Gnomonia veneta) was widespread although of slight severity. Trees have generally re-foliated and little evidence of the disease is now present. According to reports, its severity was greatest in western Connecticut and southern and southeastern New York, where considerable defoliation occurred. Both the perfect stage (G. veneta) and the imperfect stage (Gloeosporium nervisequum) were fruiting abundantly during the first two weeks of June. The disease was practically absent in Pennsylvania and negligible in eastern Massachusetts. Maryland reports its presence in the western part of the State. Few reports of anthracnoses affecting oaks, maples, hickory, or ash have been received, even though these trees are oftentimes affected in years favorable for the disease. Oak anthracnose was reported as heavy in southern and southeastern counties of New York. A slight amount of anthracnose on ash and Norway maple, with damage negligible, was reported from eastern Massachusetts. It was common on ash in eastern New York, but with little damage.



The leaf spots and blotches. Leaf spots are conspicuous by their absence. But give them time -- it is too early for many of the leaf spots, leaf blotches, and blights to have made much progress. Reports so far mention willow blight in Maine, which has resulted in many inquiries from alarmed owners; Phyllosticta and Pestalotia leaf spots on ornamentals in Massachusetts; while a Pennsylvania report tells of Phyllosticta leaf spot as fairly prevalent on understory red maple seedlings and saplings. The Septoria leaf spot, previously reported as common on birch reproduction in New Hampshire, has not appeared so far this year. Slight amounts of hawthorn leaf blight (Fabraea maculata) on nursery and planted stock, and peach leaf curl (Taphrina deformans) are present in eastern Massachusetts. Maryland reports a leaf spot on Norway and sugar maples from the northern part of the State.

**RUSTS** Cool May temperatures have served to prolong the period of sporulation of many rusts. Whether periods of high humidity were extensive enough for sporidial development, distribution, and germination on their alternate hosts remains to be seen.

White pine blister rust (Cronartium ribicola). The single report on blister rust came from New York. Ribes eradication work started about May 1. Cool weather held the underbrush back, making the search for Ribes rather easy for several weeks. In spite of the cool moist weather, normally favorable for rust buildup, very little Ribes infection has been noted.

A total of 205,000 acres are scheduled to be worked in 1961. As a result of winter mapping and examination, 99,400 acres of control area will not need immediate attention, but will be examined again in 5 to 10 years. For another 80,000 acres, control has been discontinued because the pine has been harvested or has not met control standards.

A pathologist is inspecting all Acti-dione and Phyto-Actin plots established during the past 3 years. This will be the first real appraisal of the antibiotic treatment made in this part of the East.

Gymnosporangium rusts. Gymnosporangium clavariiforme telial formation was in almost full bloom by May 10 in southern Maine, New Hampshire, and Massachusetts. At that time cedar-apple rust (G. juniperi-virginianae) galls were just breaking telia. Another cedar rust (G. globosum) was observed in the same territory, but very infrequently. Dr. Baldwin sent us specimens of G. bisetatum galls from Atlantic white cedar (Chamaecyparis thyoides) collected at the Robb Reservoir, near Stoddard, N. H. This collection is of interest in that the host occurred so far inland and because of the discontinuous nature of the host's distribution.

Other rusts. A needle rust of pitch pine is reported from New Hampshire, and red pine needle rust (Coleosporium asterum) has been observed in the Amherst vicinity of Massachusetts. Ash leaf rust (Puccinia sparganioides) was observed affecting ash trees in southern Connecticut, which in previous years were seldom affected by the disease. No other reports of ash rust have been received.

**WITCHES' BROOMS** A witches' broom of Vaccinium, caused by Pucciniastrum (Calyp-tospora) goeppertianum, is widely distributed and common throughout New England. The witches' broom of cherry (Taphrina cerasi), so commonly observed a few seasons ago, does not seem to be as common as it once was. A witches' broom on willow of unknown cause, first reported in 1958, is still present in localities where it was first noted, but has lessened its spread to nearby trees. It has recently been reported from the Granby section of Connecticut. This disease of unknown cause may be more common than supposed, for an inquiry was received from the northwestern part of the country in response to reports of it in the PEST REPORTER. This inquiry mentioned that witches' broom of willow is common in that part of the country. There is a relatively high incidence of Amelanchier witches' broom,

caused by Apiosporina collinsii, in the Athol-Gardner-Winchendon area of Massachusetts and nearby New Hampshire. It seems to be less frequently encountered elsewhere.

**NURSERY DISEASES** Some degree of cold injury was noticeable on conifer seedlings, mainly pine, during the early spring months. It was widespread, having been reported from New Jersey to Vermont. Generally the cold response causes a purplish color of the foliage. The affected seedlings recover rapidly once favorable growth conditions are resumed.

**PLANTATION DISEASES** From reports and observations of the past two years has come the realization that tip blight of conifers, caused by Diplodia pinea, is common and serious in many locations. Austrian pine is the species most seriously infected but the disease also occurs on other species -- Scotch, mugho, and sometimes red pines are often seriously infected. The greatest incidence appears to be in eastern New York, Pennsylvania, and New Jersey. The disease is less frequently seen in New England.

Rhabdocline needle cast has been heavy in plantations in the Cortland district of New York. Trees of all age classes are infected.

**WILTS** The late season and cold weather has not been conducive for wilting symptoms. However, patches of dead elms and dead mimosa trees are reminders that Dutch elm disease (Ceratocystis ulmi) and mimosa wilt (Fusarium perniciosum) are present throughout the Northeast and southern parts of our region, respectively. Wilting from Dutch elm disease is showing up in increasing quantities in southern and southeastern New York, in northern New Jersey, and in parts of Connecticut, according to observations recently made. Elm trees are beginning to die in large numbers in St. Lawrence County of New York, and it is apparent that the disease is now a serious problem for this part of the State. A summary of Dutch elm disease conditions in Maine says the disease increased in 1960, when 471 additional trees were found. There are now 146 municipalities in all but two counties (Sagadahoc and Washington) having known infections.

All reports on Verticillium wilt came from Massachusetts where it was reported on maple spp. from Agawam and Springfield, and on sugar maple in eastern Massachusetts.

**CANKERS** Information from New York State tells of new centers for the beech scale-Nectria (Nectria coccinea var. faginata) in Rensselaer and Otsego Counties. It has also recently been found in Wyoming County. Alex Shigo from New Hampshire reports scale infestations as generally light to moderate this year. A beetle predator (Chilochorus stigma) has been observed since the last week in April, and the beetles are now numerous. Ten percent of 115 beetles collected during the last week of May yielded the fungus, Nectria coccinea var. faginata, when plated on Streptomycin-malt-yeast agar. A Mycoparasite of the Nectria, Gonatorrhodiella highlei, began to appear on the trees during the first week in June, and since has almost completely covered several infected trees. Personnel of the Maine Forest Service have studied the relation of thinning on beech-scale-Nectria in plots established in 1950-51. The bark surface killed by Nectria and the mortality through 1960 was 7 percent and 1.8 percent, respectively, in thinned stands as compared to 41 percent and 17 percent, in the unthinned stands.

A report of a canker, not reported previously, concerns cankers on one-year-old seedlings of black locust at the Lowville, N. Y. nursery. According to Dr. Silverborg of Syracuse University, a Fusarium sp. has been isolated from the cankered areas.



A canker on small white pines, mostly planted since 1950, is causing considerable damage in the Tug Hill area of New York. It is feared that heavy losses may soon eliminate white pine as a favored planting tree for the area. Many new infections have been found during the past year. Its cause has not been determined. Newly formed extensions of old cankers and sporulation of old black knot cankers on cherry (Dibotryon morbosum) were observed in southern New Hampshire and Maine on May 8 - 10. Unusual concentrations of Septobasidium and Caliciopsis pinea were observed on white pines in the Leavitt plantations near Parsonsfield, Me.

Cytospora canker, caused by Cytospora kunzei, may be increasing in importance according to reports and observations made in New England and New York. Numerous branch cankers are affecting Colorado blue spruce, and both branch and trunk cankers are common in Norway and other spruce plantations. This disease is reported on Japanese larch on the New York State Reforestation Area #2, in the Tug Hill area.

Other cankers. Tympanis canker of red pine has not been a prominent part of the disease picture lately, so seeing a high incidence of the disease in trees on poor growing sites in central New York during a recent Forestry Meeting was of special interest. Other cankers reported include Strumella coryneoidea on oak, Nectria galligena on a number of hardwood species, and Hypoxylon pruinae on poplar. Speaking of poplars, both Carolina and Lombardy poplars in the southern tier of counties in New York State are heavily cankered with Dothichiza populea as the presumed cause. Cooperative plantings of Chinese chestnuts, to test their resistance to chestnut blight, has not been too successful at Liberty and Albany, Maine. Tree mortality at these locations is 59 percent and 33 percent, respectively. Bleeding canker of Norway maple, caused by Phytophthora cactorum, was reported from Montague, Mass.

ROTS Fomes annosus root rot. Renewed growth of perennial conks of F. annosus was noted in the coastal plain region of New Jersey by mid-April. At that time some new growth had reached a diameter of 1-2 cm. At South Hadley, Mass. new conk growth had just recently formed by May 1. It was necessary to detach the conks and examine the underside to detect the new growth. New tubes were just starting to form. On the Harvard Forest and on the Fox Forest in Massachusetts and New Hampshire on May 3 and May 5, respectively, new growth was still more recent. In southern Maine, the new growth of F. annosus was about the same on red and white pines as observed on the Fox Forest, or slightly more growth had occurred. The few extra days (May 8) and the intervening rains evidently were favorable for rapid growth of the fungus. White conk margins were not evident at any of these locations by May 10 and the renewal of growth of the perennial conks could only be detected by examining the underside surfaces. This renewed growth was almost exclusively confined to rather well-protected conks. By and during June, however, renewed growth was common. The past winter with deep covering snows during the prolonged cold period protected the duff-covered conks well. Therefore, many were not killed by the cold, so that the ratio of perennial to annual conks was much higher than usual.

A survey for Fomes annosus is being conducted in the eastern and southeastern United States. The survey is a cooperative effort initiated by the Southern, Southeastern, and Northeastern Forest Experiment Stations.

Surveys of Fomes annosus in New York State reveals the disease present on a number of coniferous hosts, principally red pine, in 35 counties of the State. An unverified report tells of an embarrassing situation which happened to a New York Forester. He thinned a red pine plantation this winter and immediately painted the stumps with arsenite to reduce the chances of Fomes annosus infections. The result was flareback through root grafts -- now he has few pines left for Fomes annosus to kill. A report of finding the fungus on apple in New York State is very interesting. It is believed that this is the first record of finding the fungus on this hardwood host.



Fomes annosus infections in loblolly pines on the Pocomoke and Wicomico State Forests on the Eastern Shore of Maryland are much more abundant and serious than first realized. It frequently was observed fruiting on living loblolly pines in heavily infected areas. Plans are being perfected for the establishment of experimental test plots on the Eastern Shore aimed to prevent or reduce the invasion of Fomes annosus into newly cut stands. The Northeastern Forest Experiment Station and Maryland State personnel will cooperate in these tests. They will test the effectiveness of various thinning methods. Stump treatments will consist of creosote and urea. Thinning by poisoning trees will also be tested.

The number of new locations for Fomes annosus in the Northeast continue. New infections on the Scituate Watershed in Rhode Island, and in stands of the Newark Watershed in northern New Jersey are reported. White pine as well as the previously reported infections in red pine were found in plantations near Parsonsfield, Maine. An interesting report from Connecticut foresters says, "new Fomes annosus kill seems lower to several observers."

Other rots. Fomes robustus, also known as Poria tsugina, F. hartigii, and F. tsugina, among other names, is a common rotter and cull-producer of hemlock. It is widely scattered but seems particularly damaging to mature hemlock in north-central Connecticut and south-central Massachusetts. It was also involved in hemlock top mortality near Wolcott, Vermont, where long suppression and heavy porcupine feeding probably were instrumental in top-rot buildup. Fomes fomentarius and F. applanatus are again very common and widely distributed. Both seem unusually abundant in southern and western New Hampshire, southern Maine, and north-central Massachusetts. The presence of large numbers of overmature and dieback-affected hardwoods favors these fungi. Polyporus squamosus is abundant on living and dead trees this year, some bearing especially large conks. Armillaria mellea reports tell of its presence and damage in red pine plantations, particularly in Vermont and New York.

**DIEBACKS** During 1960, many reports of diebacks involving a number of different hosts were received. Currently, ash and maple dieback are causing the greatest concern. We asked Dr. Silverborg of Syracuse University for a special report on the ash dieback in New York State. Here it is: "During the summer of 1960 a partial survey was conducted in New York State to determine the distribution and severity of an unknown malady of white ash known as ash dieback or ash decline. A total of 18 counties in the eastern section of the State were surveyed. The survey reveals that 64 percent of the ash, including both roadside trees and trees in woodland areas, are dead or in various stages of decline. In woodland or forested areas alone, 70 percent are dead or dying. Mortality in woodland areas has been observed only within recent years, indicating an extremely rapid rate of decline."

The recent publicity ash dieback has received and the realization of its being much more of a problem than hitherto believed, has resulted in an increase in reports of the trouble. Connecticut foresters report quite a bit of ash showing dead tops or dead branches, especially those along margins of woodlots or of individual trees more or less in the open. Dead and dying ash are reported in several areas in the White Mountain National Forest. Seriously affected trees have been noted in forest areas near Jamestown, N. Y. and Warren, Pa. White ash in the Augusta, Me. area and northwestward are reported to have lost two-thirds to three-fourths of their foliage. This last item was reported as a "leaf blight of ash" and its cause was not specified.

**Other diebacks.** The dieback of sugar maples continues to be severe throughout the Northeast. Red maples show similar symptoms in areas away from exposed roadside trees, where sugar maples often show most severe symptoms. New York reports of receiving more requests than usual for information on the disease. Shagbark hickory in eastern New York are declining. Black cherry dieback was so serious

near Onoville, N. Y. that a 90-acre tract was salvage logged. Still another report from New York tells of serious dieback of large black cherries in the towns of Piercefield, Colton, Clifton, and Fine in St. Lawrence County. Tips of twigs are dead and adventitious buds develop further down the twigs. Saplings and small pole trees do not appear to be affected. The intense low winter temperatures have been proposed as the cause of this condition in St. Lawrence County. Red oak mortality (not oak wilt) is reported from central Pennsylvania. A slight amount of birch mortality continues on the permanent sample plots of the Maine Forest Service. A report of dying roadside white pines was received from New Hampshire.

MISCELLANEOUS TROUBLES Miscellaneous troubles reported or noticed this year include chlorotic dwarf of white pines which is widely distributed; a pitch pine needle blight reported from New Hampshire; and multiple leaders of conifers, produced by unknown causes. The most obvious causes of multiple leader, such as Grosbeak feeding and insect injury, do not seem to apply in many cases. An attempt to determine the role of Grosbeak feeding as a cause of this malady by personnel of the Maine Forest Service will not be known until bagged tops of white pines are examined this summer. The multiple leader condition is seen most often in spruce and white pine, although other conifers may be affected. Resinosis of white pine appears to be widely distributed. Certain areas have more of this trouble than others. A report from New York mentions a 10-acre white pine plantation near DeRuyter infected by a disease strongly suggesting resinosis. Other tree troubles reported include natural gas injury to Norway maples, fill injury to several tree species, transplanting failures, slime flux of elms, and the presence of sooty mold on various trees.

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Following are some recent publications of interest to PEST REPORTER readers:

1. Christensen, Clyde M. 1959. Common fleshy fungi (revised). Burgess Publishing Co., Minneapolis 15, Minn.
2. Committee on Insects and Diseases, SAF, New York Section [compiled by]. A summary of current forest pest problems for New York State, 1960-1961. (Second summary report of detailed report submitted 1956-1959.)
3. Kimmey, J. W. and Bynum, H. H., Jr. 1961. Heart rots of red and white firs. Forest Pest Lfl. No. 52, U. S. D. A., Forest Service.
4. Koenigs, Jerome W. 1960. Fomes annosus: a bibliography with subject index. Southern Forest Expt. Sta., Occasional Paper No. 181, New Orleans, La.
5. Nichols, Lester P. (undated) Tree diseases -- discription and control. Pennsylvania State Univ. Extension Service, Special Circular No. 46, University Park, Pa.
6. True, R.P., Barnett, H. L., Dorsey, C. K. and Leach, J. G. 1960. Oak wilt in West Virginia. W. Va. Univ. Agr. Expt. Sta., Bul. 448T. Morgantown, W. Va.
7. True, R. P., and Gillespie, W. H. 1961. Oak wilt and its control in West Virginia. W. Va. Univ. Agr. Expt. Sta., Cir. 112.
8. Westcott, Cynthia. 1960. Plant Disease Handbook. D. Van Nostrand Co., New York 18, N.Y.

